Product sheet

A427 Cells | 300111

General information

Description	A427 cells originate from lung tissue, specifically a carcinoma, exhibit epithelial morphology and grow adherently. A427 cells have a doubling time of approximately 28 hours in RPMI 1640 medium supplemented with 10% fetal bovine serum (FBS). In ACL-3 medium, the doubling time is slightly extended to 38 hours, while in ACL-3 supplemented with bovine serum albumin (BSA), it reaches 42 hours. These variations in doubling time provide valuable insights into cell behaviour under different experimental conditions. At passage 60, A427 cells display a hypotriploid to hypertriploid karyotype. This means the cells possess abnormal chromosomes, including dicentrics, minutes, and a large subtelocentric marker. Such karyotypic abnormalities are often associated with cancer cells and contribute to the unique characteristics of this cell line. A427 cells exhibit tumorigenic properties, allowing them to form tumours when injected into nude mice. These tumours resemble undifferentiated adenocarcinoma, further emphasizing the relevance of this cell line in studying lung cancer and its progression. With its exceptional features, A427 cells find utility in various applications, particularly in cancer research. Their epithelial morphology and lung origin make them an ideal model for studying lung cancer and related diseases. Additionally, A427 cells are well-suited for 3D cell culture techniques, providing a more physiologically relevant environment to explore the behaviour of lung cancer cells.
Organism	Human
Tissue	Lung
Disease	Carcinoma
Synonyms	A-427, A427N

Characteristics

Age	52 years
Gender	Male
Ethnicity	Caucasian
Morphology	Epithelial-like
Growth properties	Adherent

Regulatory Data

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Citation	A427 (Cytion catalog number 300111)
Biosafety level	1
NCBI_TaxID	9606
CellosaurusAccession	CVCL_1055

Biomolecular Data

Protein expression	P53 positive
Tumorigenic	Yes, in nude mice. Forms an undifferentiated tumor suggestive of adenocarcinoma.
Karyotype	P60) hypotriploid to hypertriploid with abnormalities including dicentrics, minutes and large subtelocentric marker

Handling

Culture Medium	EMEM (MEM Eagle), w: 2 mM L-Glutamine, w: 2.2 g/L NaHCO3, w: EBSS (Cytion article number 820100a)
Supplements	Supplement the medium with 10% FBS and 1% NEAA
Dissociation Reagent	Accutase
Subculturing	Remove the old medium from the adherent cells and wash them with PBS that lacks calcium and magnesium. For T25 flasks, use 3-5 ml of PBS, and for T75 flasks, use 5-10 ml. Then, cover the cells completely with Accutase, using 1-2 ml for T25 flasks and 2.5 ml for T75 flasks. Let the cells incubate at room temperature for 8-10 minutes to detach them. After incubation, gently mix the cells with 10 ml of medium to resuspend them, then centrifuge at 300xg for 3 minutes. Discard the supernatant, resuspend the cells in fresh medium, and transfer them into new flasks that already contain fresh medium.
Seeding density	1 x 10^4 cells/cm^2 will result in a confluent monolayer within 3 days.
Fluid renewal	2 to 3 times per week
Post-Thaw Recovery	After thawing, plate the cells at 4 x 10^4 cells/cm^2 and allow the cells to recover from the freezing process and to adhere for at least 24 hours.

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Freeze medium	As a cryopreservation medium, we use complete growth medium (including FBS) + 10% DMSO for adequate post-thaw viability, or CM-1 (Cytion catalog number 800100), which includes optimized osmoprotectants and metabolic stabilizers to enhance recovery and reduce cryo-induced stress.
Thawing and Culturing Cells	1. Confirm that the vial remains deeply frozen upon delivery, as cells are shipped on dry ice to maintain optimal temperatures during transit. 2. Upon receipt, either store the cryovial immediately at temperatures below -150°C to ensure the preservation of cellular integrity, or proceed to step 3 if immediate culturing is required. 3. For immediate culturing, swiftly thaw the vial by immersing it in a 37°C water bath with clean water and an antimicrobial agent, agitating gently for 40-60 seconds until a small ice clump remains. 4. Perform all subsequent steps under sterile conditions in a flow hood, disinfecting the cryovial with 70% ethanol before opening. 5. Carefully open the disinfected vial and transfer the cell suspension into a 15 ml centrifuge tube containing 8 ml of room-temperature culture medium, mixing gently. 6. Centrifuge the mixture at 300 x g for 3 minutes to separate the cells and carefully discard the supernatant containing residual freezing medium. 7. Gently resuspend the cell pellet in 10 ml of fresh culture medium. For adherent cells, divide the suspension between two T25 culture flasks; for suspension cultures, transfer all the medium into one T25 flask to promote effective cell interaction and growth. 8. Adhere to established subculture protocols for continued growth and maintenance of the cell line, ensuring reliable experimental outcomes.
Incubation Atmosphere	37°C, 5% CO_2, humidified atmosphere.
Flask Coating	None
Shipping Conditions	Cryopreserved cell lines are shipped on dry ice in validated, insulated packaging with sufficient refrigerant to maintain approximately −78 °C throughout transit. On receipt, inspect the container immediately and transfer vials without delay to appropriate storage.

Storage Conditions	For long-term preservation, place vials in vapor-phase liquid nitrogen at about −150 to −196 °C. Storage at −80 °C is acceptable only as a short interim step before transfer to liquid nitrogen.

Quality Control & Molecular Analysis

Sterility	Mycoplasma contamination is excluded using both PCR-based assays and luminescence-based mycoplasma detection methods. To ensure there is no bacterial, fungal, or yeast contamination, cell cultures are subjected to daily visual inspections.